Effectiveness Of American Heart Association (AHA) Certified Basic Life Support (BLS) Training Among the Nurses Working in Selected Hospitals of Pune City.

Proposal for Ph D

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BY

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1. Abstract

A Quasi experimental study to assess the effectiveness of American Heart Association (AHA) certified Basic Life Support (BLS) training on knowledge and skill set of Nurses working in selected Hospitals of Pune city.

In this research study around 200 nurses from various cadres will be selected from selected Hospitals in Pune city. These Nursing staff will be administered pretest standardized structured Questionnaire pertaining to the knowledge regarding Basic Life Support (BLS). The same nurses will be administered standardized structured five point Likert scale checklist on skill set of Basic Life Support (BLS). The questionnaire is a standardized tool which will be used to elicit the desired information. The Nurses who are included in the study will be given American Heart Association (AHA) certified Basic Life Support (BLS) training which is a standardized training. These Nurses will be administered post test standardized structured Questionnaire pertaining to the knowledge regarding Basic Life Support (BLS). At the same time the nurses will be administered standardized structured five point Likert scale checklist on skill set of Basic Life Support (BLS). The data will be collected from the selected Hospitals of Pune city. Descriptive and Inferential statistics will be applied for assessing the result and to test the Hypothesis.

2. Introduction

About 92% cardiac arrest victims die before reaching the hospital, but statistics prove that if more people knew CPR, more lives could be saved. Immediate CPR can double, or even triple a victim's chance of survival (REF- AHA)

Approximately 100,000 people suffer a fatal cardiac arrest in Germany annually, which is about ten times more than deaths resulting from motor vehicle accidents. New devices and techniques for cardio pulmonary resuscitation (CPR) have been developed in order to enhance the efficacy of chest compressions during CPR. (Linder K. H, Wenzel V., Anaesthesist, New mechanical methods for cardiopulmonary resuscitation(CPR), March 1997; pp.220-30)

An important fact is that nurses were significantly more likely to decline CPR efforts. Nurses are generally the first responders to an in-hospital cardiac arrest and initiate basic life support while waiting for the advanced cardiac life support.

In a study by Dwyer and associates, the attitudes of individual nurses influenced the speed and level of involvement in true emergency situations, CPR (Dwyer T, Mosel Williams L,2002,Nurses behavior regarding CPR and the theories of reasoned action and planned behavior.Resuscitation52pp-85-90)

Cardiopulmonary resuscitation (CPR) is an important lifesaving skill taught to hospital staff throughout the world. There is a marked and rising demand for CPR training from professional healthcare groups and from public .These training programs involve considerable operational and opportunity costs and must be repeated annually for mandatory recertification. (Tweed WA, Bristow G, Donen N: Resuscitation from cardiac arrest: Can Med Assoc J 1980; pp-297-300)

An important issue in decisions about CPR training is how accurately a person perceives his or her competence in CPR, because this perception is the motivation assumed to drive people to seek CPR practice and retraining. Regarding perceived ability versus actual ability, other studies have shown that participants in CPR training programs have not been able to accurately predict their knowledge and skills (Weaver FJ, Ramirez AG, Dorfman SB, and Raizner AE. Trainees' retention of cardiopulmonary resuscitation. How quickly they forget. JAMA. 1979 Mar 2;241(9)pp-901–907) Another debated issue is the presumed effect of practice on retention of CPR knowledge and skills(Weaver FJ, Ramirez AG, Dorfman SB, Raizner AE. Trainees' retention of cardiopulmonary resuscitation. How quickly they forget. JAMA. 1979 Mar 2; 241(9):901–903)

The focus of the CPR effort -is the effect on patients. The clinical trials in which CPR was found to significantly improve outcome if begun within 4 minutes of arrest were conducted in settings with extensive paramedical backup (Tweed WA, Bristow G, Donen N et al : Evaluation of hospital- based cardiac resuscitation,1973-77.pp-301-304)

Millions of people are being trained each year but the efficacy of this training and the subsequent performance of the skills learnt has come into question. The response time

in emergency situation is critical but the CPR and First AID provided must be performed properly in order to prevent further complications and potentially save Lives.(Engeland et al 2002)

With the need for effective initiation of intervention being known, Health care professionals often face criticisms for inadequate basic life saving skills (Das and elzubeir 2001, Mcormack, Camon and Eisenberg 1989)

Insufficient skills of basic life support are caused by a lack of training and inappropriate instruction, limited practice, lack of self efficacy and poor skill retention (Das and elzubeir 2001)

Hence the researcher felt that a Quasi experimental study will be undertaken on the following topic.

3. Statement of the problem

A study to assess the effectiveness of American Heart Association (AHA) certified Basic Life Support (BLS) training on knowledge and skill set of Nurses working in selected Hospitals of Pune city.

4. Objectives

1. To assess the existing knowledge of Basic Life Support (BLS) among the nurses working in selected Hospitals of Pune City.

2. To assess the skill set of Basic Life Support (BLS) among the nurses working in selected Hospitals of Pune City.

3. To assess the effectiveness of American Heart Association (AHA) certified Basic Life Support (BLS) training on knowledge and skill set of nurses working in selected Hospitals of Pune City.

4. To reassess the effectiveness of American Heart Association (AHA) certified Basic Life Support (BLS) training on knowledge and skill set of nurses working in selected Hospitals of Pune City after a gap of six months.

5. To co-relate the knowledge with skill set of nurses working in selected Hospitals of Pune City.

6. To co-relate the findings with selected Demographic variables.

5. Hypothesis

H_0 -There will not be significant improvement in the Knowledge and skill set of Basic Life Support (BLS) among Nurses working in selected Hospitals of Pune City after administration of American Heart Association (AHA) certified Basic Life Support (BLS) training.

H_1 – There will be significant co-relation between Knowledge and skill set of Basic Life Support (BLS) among Nurses working in selected Hospitals of Pune City.

H_2 – There will be significant co-relation between knowledge and skill set regarding American Heart Association (AHA) certified Basic Life Support (BLS) with selected Demographic variables of Nurses working in selected Hospitals of Pune city.

H_3 - There will be significant knowledge and skill decay after six months of the training of Basic Life Support (BLS)

6. Literature Review

1. According to Ric Mellor et al effect of training on skill acquisition by Health Care workers in Resuscitation Council UK 2005 reviewed that there were significant

improvement in the proportion of subject after BLS training correctly performing safe approach. (International Emergency Nursing Vol – 18, issue – 2, April 2010, pg 61- 66)

2. Saxer Till et al conducted a study to evaluate and compare educational impact on emergency medicine training and found out that the training programme seemed to be effective in improving trainees overall knowledge and clinical performance. (Swiss Med Weekly 2009 – 139 (29 – 30) 423 - 429).
3. A study conducted in Sweden concluded that BLS theoretical knowledge increased with the training of the CPR, the nurses reached relatively at higher level after BLS training. (Swiss Med Weekly 2009)
4. The study conducted in Minneapolis concluded that "What if you witness such an event of a serious ailment and do not know CPR? You will just wait for the doctor to turn up at the location of the accident. What if while waiting, the person's breathing problem increases? You might start blaming yourself for not knowing cardio pulmonary resuscitation(Linder K. H, Wenzel V., Anaesthesist, New mechanical methods for cardiopulmonary resuscitation(CPR), March 1997; pp.220-30)

5. As per the survey conducted by AHA on emergency awareness in the year 2008 it was found out through 1,132 adults who gave the following results; 89%of respondents were willing to do something if they witnessed a medical emergency,21%were confident that they could perform CPR and 15% believed that they could use an automated external defibrillator (AED) in an emergency.(AHA-2008)

6. In 1994 Swedish researchers reported that

a. "Cardiopulmonary resuscitation initiated by a bystander maintainventricular fibrillation and triples the chance of surviving a cardiac arrest outside the hospital. Furthermore, it seems to protect against death in association with brain damage as well as with myocardial damage."
b. They also believe that bystander CPR is an essential component in the continuum of care for Sudden Cardiac Arrest. This management, now called the minimally interrupted cardiac resuscitation (MICR) technique probably produces the best

chances for survival .Other terms used in this context are cardio cerebral resuscitation (CCR)or cardiac resuscitation, or compression .

c. Ongoing simplification of CPR instruction, in terms of easily understandable by both lay persons and medical professionals, which includes the adoption of 'hands-only CPR' which helps in eliminating one of the major barriers to bystander CPR, i.e mouth to mouth breathing.

7. Lieberman's study (1999) highlights the problems that professionals have in palpating the carotid pulse when there is one to be found. 54.6% of his sample were unsuccessful in finding the carotid pulse. From sample of qualified nurses in Sweden 75% failed to locate the position of the carotid pulse and immediately did cardiac compressions without knowing if the casualty had a heart beat or not.

8. A study conducted by Hans J S et-al from Korea also reviewed that formal American Heart Association (AHA) certified Cardio Pulmonary Resuscitation(CPR) has the following results.

1. In post test, knowledge level of the trainees increased

2. Competency level also increased, but there were other grey areas.

9. James Garvey conducted PhD study to assess educational perspective of skill decay regarding BLS.She had four groups

- Nurses and student Nurses
- Primary and Secondary school Teachers
- Candidate of First Aid at work.
- Candidates attending Distance Learning Course

Her study concluded that the candidate who attended the distance learning route showed much higher levels of skill retention than the candidates trained by the conventional route.

10. A study conducted by Shanta Chandrasekaran et al also concluded that awareness ofBasic Life Support(BLS) among students, Doctors and Nurses is very poor and needs to be improved.(Indian Journal Of Anaesthesiology 2010)

11. According to recent estimates cases of cardiovascular disease may increase from about 2.9 crores in 2000 to as many as 6.4 crore in 2015. Death from CVD will also more than double. Most of this increase will occur on account of coronary heart disease – AMI, Angina, CHF and inflamatory disease. Data also suggest that of CVD in rural populations will remain lower than that of urban populations, they will continue to increase, reaching around 13.5 % of the rural population in the age group of 60-69 years by 2015.**The prevalence rates among younger adults(age group 40 years and above) are also likely to increase**(Source : Naresh Trehan :NCMH background papers – New Delhi – 2005)

12. Broomfield undertaken study regarding the retention of basic cardiopulmonary resuscitation (CPR) skills and knowledge of registered nurses The objective of the study was to investigate the speed with which retention of CPR skills and knowledge deteriorates, and to investigate the need for regular updating in CPR The latest guidelines issued by the Resuscitation Council (1993) were used, which also aided in the design and use of the two research tools, namely an eight-point skills-testing observation tool and a 26-point knowledge-testing questionnaire While a 3-hour update in CPR skills revealed an initial improvement, the decrease in retention of skills 10 weeks later was significant (*P*= 0.01)**The findings of the research reflect that retention of skills and knowledge quickly deteriorates if not used or updated regularly** Therefore this research supports the importance of CPR refresher courses on a regular basis (Broomfield, R 1996 : Journal of advance Nursing 23:1016)

13. By 2010 India will carry 60 % of the world's heart disease burden, nearly four times more than its share of the global population, according to studyIschemic heart disease – mainly heart attack and Coronary Artery Disease is the leading cause of mortality in the world, accounting for 7.1 million deaths in 2001.A team of researchers, led by **Denis Xavier of St John's National academy of Heath Sciences in Bangalore**, gathered data on nearly 21000 coronary patients from 89 hospitals across 50 cities across the

country. They found that out of 20,468 patients who have given definitive diagnosis, 60 % showed evidence of heart attack, compared to 40 % in developed countries.

(www.dawn.com)

14. By 2020, India will have the largest population suffering from Coronary artery disease, India will account for one third of death due to Heart disease,20,000 patient's develop heart disease every day in India . About 60 million Indians suffer from Heart disease and 30% more are at a high risk. (Anilkumar 2010)

7. Proposed Methodology

a) Quasi experimental study will be conducted
b) Setting – Selected Hospitals of Pune City
c) Population –Nurses of various cadres working in selected Hospitals of Pune City.
d) Sample size – 200 nurses of various cadres
e) Sampling method – Convenient sampling.

Tool and Technique-

Tool will be developed by Researcher in three sections

Section I : Demographic details of the sample

Section II: Structured questionnaire on knowledge regarding Basic Life Support (BLS)

Section III: Five point Likert's scale to assess skill set on Basic Life Support (BLS)

1. Self designed structured questionnaire will be administered to elicit Pre Basic Life Support (BLS) knowledge level of nurses working in selected Hospitals of Pune city.

2. Five point Likert's scale check list will be administered to elicit skill set of nurses prior to administration of American Heart Association (AHA) certified Basic Life Support (BLS) training.

3. Basic Life Support (BLS) training which is American Heart Association (AHA) certified will be administered on these Nurses who are from selected Hospitals of Pune city. This training module is standardized package & is been administered by experts.

4. A Post test will be administered to the same nurses after a period of 7 days of Basic Life Support (BLS) training, to check the knowledge level and skill set.

5 .The reassessment of the knowledge and skill set of the Nurses regarding Basic Life Support (BLS) will be done after a gap of six months to observe knowledge skill decay.

f) Description of variable – American Heart Association (AHA) certified Basic Life Support (BLS) training is independent variable

Knowledge and skill set of nurses is dependent variable.

g) Pilot study **-** Will be conducted before the main study to check the feasibility of the Tool and Technique. After the pilot study the tool will be modified as per the requirement.10% of the total study sample will be included in the pilot study.

h) Data Collection

1. Pre test will be administered to the Nurses working in the selected Hospitals of Pune City.
2. American Heart Association (AHA) certified Basic Life Support (BLS) training module will be administered to the Nurses working in selected Hospitals of Pune City.
3. Post test will be conducted after 7 days of training.
4. The reassessment of the knowledge and skill set of the Nurses regarding Basic Life Support (BLS) will be done after a gap of six months to observe knowledge and skill decay.

i) Data Analysis

After data collection is over, data will be organized by using Microsoft excel and will be analyzed using descriptive and inferential statistics.

Summary, discussion, conclusion and recommendation will be done by Researcher using research findings.

8. Issues to be addressed

Nurses working in the Hospital should be able to perform Basic Life Support (BLS), therefore theoretical knowledge is necessary. Most of the nurses working in the Hospital lack knowledge and skill in Basic Life Support (BLS). Researcher tries to identify the existing knowledge of the nurses working in the Hospitals with reference to their knowledge and skill in Basic Life Support (BLS) .The researcher would like to assess educational perspectives of Nurses regarding decaying of the knowledge and skill set. The finding of the study will throw light on as to how knowledge and skill in Basic Life Support (BLS) training will improve their efficiency in actual situation. Researcher will benefit from this data and utilize these findings for training the nurses in Basic Life Support (BLS) in various hospitals. This will also help hospital management and other concern to identify the training need of the nurses and plan the intervention.

9. Conclusion

Cardiac cases are on the rise world over and Pune City population is no exception. The Nurses working in Hospitals must know to perform Basic Life Support (BLS).

Suggestions and recommendation of these findings may be implemented and generalized among Hospitals.

10. Schedule of the study

Sr. No	Proposed Ph. D work	Period of work	Tentative date
1	Submission and approval of proposal to the University	2 weeks	Sept, 2010
2	Presentation of synopsis before the research and ethical committee of the University		Sept- Oct, 2010
3	Registration	2 weeks	Sept-Oct, 2010
4	Meeting with the guide & finalization of the statement, objectives, methodology and Tool.	2 weeks	Sept-Oct, 2010
5	Exhaustive study of the topic and pilot study.	3 months	Dec- Feb 2011
6	Collection of data continued		May – July, 2011
7	Submission and presentation of the 1st progress report		Aug – Sept, 2011
8	Modification if any in study	2 weeks	Aug – Sept, 2011
9	Submission and presentation of the 2nd report		May, 2012
10	Statistical analysis	1 month	June, 2012
11	Submission of the synopsis		July, 2012
12	Writing of the thesis		July, 2012
13	Submission of the thesis		Aug, 2012

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